

IN THE CLAIMS:

1. (Currently Amended) An image reading device having a plurality of photoelectric conversion elements formed in one or more rows on an IC chip and a metal conductor layer having openings formed therein for limiting light striking the photoelectric conversion elements,

wherein the metal conductor layer is formed around the openings individually so as to prevent light from striking the photoelectric conversion elements except through the openings, and

wherein a metal conductor having substantially a same width as the metal conductor layer is formed integrally with the metal conductor layer in an area extending from a photoelectric conversion element located at ~~each end of the IC chip to a chip edge~~ an end of the row to an edge of the IC chip.

2. (Currently Amended) An image reading device comprising an IC chip, the IC chip comprising:

a plurality of photoelectric conversion elements arranged at predetermined intervals in one or more rows on the IC chip and having an opening each;

a first metal conductor layer formed around the openings individually so as to prevent light from striking the photoelectric conversion elements except through the openings; and

a second metal conductor layer having substantially a same width as the first metal conductor layer and formed between an edge of the IC chip and the first metal conductor layer in an area extending from a the photoelectric conversion element

located at an end of the row ~~and a chip edge~~ to the edge of the IC chip so as to shut off light coming obliquely from above in a direction of the ~~chip edge~~ of the IC chip.

3. (Currently Amended) An image reading device as claimed in claim 2,
wherein the ~~first and second metal conductor layers are~~ layer is connected
~~together by being~~ formed continuously starting from the ~~chip edge~~ of the IC chip,
wherein the first metal conductor layer, the second metal conductor layer, and a
semiconductor substrate on which elements are formed are maintained at a same
potential.

4. (Withdrawn) An image reading device as claimed in claim 2,
wherein the second metal conductor layer is formed staring from the chip edge,
and is insulated from the first metal conductor layer by a gap secured in between.

5. (Withdrawn) An image reading device as claimed in claim 2,
wherein the second metal conductor layer is insulated from the chip edge by a
gap secured in between, and is connected to the first metal conductor layer by being
formed continually therewith.

6. (Currently Amended) An image reading device comprising an IC chip, the
IC chip comprising:

a semiconductor substrate on which elements are formed;

a plurality of photoelectric conversion elements arranged at predetermined intervals in one or more rows on the semiconductor substrate;

an insulating layer formed over substantially an entire surface of the IC chip on and around the photoelectric conversion elements;

a first metal conductor layer formed on a surface of the insulating layer with openings formed above the photoelectric conversion elements and in such a way as to surround the openings, the first metal conductor layer serving to prevent light from striking the photoelectric conversion elements except through the openings; and

a second metal conductor layer having substantially a same width as the first metal conductor layer and formed between an edge of the IC chip and the first metal conductor layer in an area extending from a photoelectric conversion element located at an end of the row to the edge of the IC chip so as to shut off light coming obliquely from above in a direction of the edge of the IC chip; and

a plurality of contact holes formed at predetermined intervals in at least one row in the insulating layer so as to surround each of the openings individually along every side thereof, the contact holes serving to connect the first metal conductor layer to the semiconductor substrate and simultaneously preventing light from striking the photoelectric conversion elements through openings other than the openings formed right above the respective photoelectric conversion elements.

7. (Currently Amended) An image reading device as claimed in claim 2, further comprising:

a semiconductor substrate on which elements are formed;

an insulating layer formed over substantially an entire surface of the IC chip on and around the plurality of photoelectric conversion elements; and

a plurality of contact holes formed at predetermined intervals in at least one row in the insulating layer so as to surround each of the openings individually along every side thereof, the contact holes serving to connect the first metal conductor layer to the semiconductor substrate and simultaneously preventing light from striking the photoelectric conversion elements through openings other than particular openings.